

COURSE DESCRIPTIONS - Grade 12

(NOTE: Copies of all outlines of courses of study are available in the school office for parental perusal. Curriculum documents can be accessed on the Ministry of Education website.)

Grade 12

AMU4M - Instrumental Music (*university or college preparation*)

This course enables students to enhance their musical literacy through the creation, appreciation, analysis, and performance of music. Students will perform traditional, commercial, and art music, and will respond with insight to live and recorded performances. Students will enhance their understanding of the function of music in society and the impact of music on themselves and various communities and cultures. Students will analyze how to apply skills developed in music to their life and careers.

Pre-requisite: AMU30 or AMU3M *Text:* None

AMU30 - Performance Music (*open*)

This course develops students' musical literacy through performance and the preparation and presentation of music productions. Students will perform works at a level consistent with previous experience. Independently and collaboratively, students will use current technology and the creative and critical analysis processes to plan, produce, present, and market musical productions. Students will respond to, reflect on, and analyze music from various genres and periods, and they will develop skills transferable to other aspects of their life and their careers.

Pre-requisite: None *Text:* None

AMU4E-Performance Music (*workplace preparation*)

This course provides students with the fundamental knowledge and skills needed to succeed in the music workplace. Students will, at a level consistent with previous experience, perform appropriate musical works. Independently and collaboratively, students will use current technology and the creative and critical analysis processes to plan, produce, and market music presentations that reflect a broad spectrum of workplace contexts. In addition, students will explore ethical and safe practices related to music. Prerequisite: Music, Grade 11, Open

AVI4M - Visual Arts (*university or college preparation*)

This course focuses on enabling students to refine their use of the creative process when creating and presenting two- and three-dimensional art works using a variety of traditional and emerging media and technologies. Students will use the critical analysis process to deconstruct art works and explore connections between art and society. The studio program enables students to explore a range of materials, processes, and techniques that can be applied in their own art production. Students will also make connections between various works of art in personal, contemporary, historical, and cultural contexts. *Pre-requisite:* AVI3M *Text:* None

BBB4M - International Business Fundamentals (*university or college preparation*)

This course provides an overview of the importance of international business and trade in the global economy and explores the factors that influence success in international markets. Students will learn about the techniques and strategies associated with marketing, distribution, and managing international business effectively. This course prepares students for postsecondary programs in business, including international business, marketing, and management.

Prerequisite: None *Text:* *Fundamentals of International Business* (Thompson)

CGW4U – World Issues: A Geographic Analysis (*university preparation*)

In this course, students will address the challenge of creating a more sustainable and equitable world. They will explore issues involving a wide range of topics, including economic disparities, threats to the environment, globalization, human rights, and quality of life, and will analyze government policies, international agreements, and individual responsibilities relating to them. Students will apply the concepts of geographic thinking and the

geographic inquiry process, including the use of spatial technologies, to investigate these complex issues and their impacts on natural and human communities around the world.

Prerequisite: Any university or university/college preparation course in Canadian and world studies, English, or social sciences and humanities *Text:* *Global Connections: Canadian and World Issues* (Pearson)

ENG4U – English (university preparation, compulsory)

This course emphasizes the consolidation of the literacy, communication, and critical and creative thinking skills necessary for success in academic and daily life. Students will analyze a range of challenging literary texts from various periods, countries, and cultures; interpret and evaluate informational and graphic texts; and create oral, written, and media texts in a variety of forms. An important focus will be on using academic language coherently and confidently, selecting the reading strategies best suited to particular texts and particular purposes for reading, and developing greater control in writing. The course is intended to prepare students for university, college, or the workplace.

Pre-requisite: ENG3U *Texts:* *Frankenstein* (Penguin), *Hamlet* (Oxford,) *Genesis & Revelation* (NIV Bible), *Brave New World* (Flamingo), *The Screwtape Letters* (Spire)

EWC4U – English Writer’s Craft (university preparation)

This course emphasizes knowledge and skills related to the craft of writing. Students will analyze models of effective writing; use a workshop approach to produce a range of works; identify and use techniques required for specialized forms of writing; and identify effective ways to improve the quality of their writing. They will also complete a major paper as part of a creative or analytical independent study project and investigate opportunities for publication and for writing careers.

Pre-requisite: ENG3U *Text:* *The Writer’s Craft* (Harcourt)

ICS4U - Computer Science (university preparation)

This course enables students to further develop knowledge and skills in computer science. Students will use modular design principles to create complex and fully documented programs, according to industry standards. Student teams will manage a large software development project, from planning through to project review. Students will also analyze algorithms for effectiveness. They will investigate ethical issues in computing and further explore environmental issues, emerging technologies, areas of research in computer science, and careers in the field.

Pre-requisite: ICS3U *Text:* None

IDC4U – Engaging the Origins of Western Thought (university preparation, compulsory at NTCS)

This course explores the development of philosophy and the historical events of the modern age that have shaped western thinking and institutions. Using an interdisciplinary approach, students will explore how these ideas and events have impacted the development of institutions (e.g. the legal system, government) and the predominant thinking of western culture (e.g. the scientific basis of the decision making process, the view of the human person). Using a variety of resources and research methods students will critique the underlying assumptions and rationale of their chosen career paths and develop the critical thinking skills that will enable them to make informed contributions in their future educational, community and work environments.

Prerequisite: Any university or university/college preparation course in Canadian and world studies, English, or social sciences and humanities *Text:* None

MCV4U – Calculus and Vectors (university preparation)

This course builds on students’ previous experience with functions and their developing understanding of rates of change. Students will solve problems involving geometric and algebraic representations of vectors and representations of lines and planes in three dimensional space; broaden their understanding of rates of change to include the derivatives of polynomial, sinusoidal, exponential, rational, and radical functions; and apply these concepts and skills to the modelling of real-world relationships. Students will also refine their use of the mathematical processes necessary for success in senior mathematics. This course is intended for students who

choose to pursue careers in fields such as science, engineering, economics, and some areas of business, including those students who will be required to take a university-level calculus, linear algebra, or physics course.

Pre-requisite: MCR3U *Note:* The Advanced Functions course (MHF4U) must be taken prior to or concurrently with Calculus and Vectors (MCV4U). *Text:* Calculus and Vectors 12 (McGraw Hill Ryerson)

MDM4U - Mathematics of Data Management (university preparation)

This course broadens students' understanding of mathematics as it relates to managing data. Students will apply methods for organizing and analyzing large amounts of information; solve problems involving probability and statistics; and carry out a culminating investigation that integrates statistical concepts and skills. Students will also refine their use of the mathematical processes necessary for success in senior mathematics. Students planning to enter university programs in business, the social sciences, and the humanities will find this course of particular interest.

Pre-requisite: MCR3U *Text:* Mathematics of Data Management (McGraw Hill Ryerson)

MHF4U – Advanced Functions (university preparation)

This course extends students' experience with functions. Students will investigate the properties of polynomial, rational, logarithmic, and trigonometric functions; develop techniques for combining functions; broaden their understanding of rates of change; and develop facility in applying these concepts and skills. Students will also refine their use of the mathematical processes necessary for success in senior mathematics. This course is intended both for students taking the Calculus and Vectors course as a prerequisite for a university program and for those wishing to consolidate their understanding of mathematics before proceeding to any one of a variety of university programs.

Pre-requisite: MCR3U *Note:* In order to study Calculus and Vectors (MCV4U), the Advanced Functions course (MHF4U) must be taken prior to or concurrently with this course.

Text: Advanced Functions 12 (McGraw Hill Ryerson)

PPL4O - Healthy Active Living Education (open)

This course enables students to further develop the knowledge and skills they need to make healthy choices. It places special emphasis on how students can maintain the habits of healthy, active living throughout their lives as they make the transition to adulthood and independent living. Through participation in a wide range of physical activities in a variety of settings, students can enhance their movement competence, personal fitness, and confidence. Students also acquire an understanding of the factors and skills that contribute to healthy development and learn how their own well-being is affected by, and affects, the world around them. Students build their sense of self, learn to interact positively with others, and develop their ability to think critically and creatively.

Pre-requisite: None *Text:* Recreation and Fitness Leadership, second edition. (Kinesiology Books Publisher)

PSK4U – Introductory Kinesiology (university preparation)

This course focuses on the study of human movement and of systems, factors, and principles involved in human development. Students will learn about the effects of physical activity on health and performance, the evolution of physical activity and sport, and the physiological, psychological, and social factors that influence an individual's participation in physical activity and sport. The course prepares students for university programs in physical education and health, kinesiology, health sciences, health studies, recreation, and sports administration.

Pre-requisite: Any Grade 11 university or university/college preparation course in science, or any Grade 11 or 12 course in health and physical education *Text:* Kinesiology: An Introduction to Exercise Science (Thompson) and associated lab manual

SBI4U – Biology (university preparation)

This course provides students with the opportunity for in-depth study of the concepts and processes associated with biological systems. Students will study theory and conduct investigations in the areas of metabolic processes, molecular genetics, homeostasis, evolution, and population dynamics. Emphasis will be placed on achievement of

the detailed knowledge and refined skills needed for further study in various branches of the life sciences and related fields.

Pre-requisite: SBI3U *Text:* *Biology 12 (Nelson)*

SCH4U – Chemistry (*university preparation*)

This course enables students to deepen their understanding of chemistry through the study of organic chemistry, the structure and properties of matter, energy changes and rates of reaction, equilibrium in chemical systems, and electrochemistry. Students will further develop their problem-solving and investigation skills as they investigate chemical processes, and will refine their ability to communicate scientific information. Emphasis will be placed on the importance of chemistry in everyday life and on evaluating the impact of chemical technology on the environment.

Pre-requisite: SCH3U *Text:* *Chemistry 12 (McGraw Hill Ryerson)*

SPH4U – Physics (*university preparation*)

This course enables students to deepen their understanding of physics concepts and theories. Students will continue their exploration of energy transformations and the forces that affect motion, and will investigate electrical, gravitational, and magnetic fields and electromagnetic radiation. Students will also explore the wave nature of light, quantum mechanics, and special relativity. They will further develop their scientific investigation skills, learning, for example, how to analyze, qualitatively and quantitatively, data related to a variety of physics concepts and principles. Students will also consider the impact of technological applications of physics on society and the environment.

Pre-requisite: SPH3U *Text:* *Physics 12 (Nelson)*

NTCS reserves the right to alter at any time the course selections described herein by adding, or deleting courses or by revising the timetable to meet changing circumstances. Textbooks are also subject to change.